Claims

We claim

1. A process for producing Tiacumicins that comprises culturing a microorganism having the ability to produce Tiacumicins in a nutrient medium and accumulating at least one Tiacumicin in the nutrient medium, wherein the yield of at least one Tiacumicin is greater than about 50 mg/L of whole fermentation broth.
2. A process according to Claim 1 wherein said yield is greater than about 100 mg/L broth.
3. A process according to Claim 2 wherein said yield is greater than about 200 mg/L broth.
4. A process according to Claim 1 wherein said yield is from about 50 mg/L broth to about 500 mg/L broth.
5. A process according to Claim 4 wherein said yield is from about 100 mg/L broth to about 500 mg/L broth.
6. A process according to Claim 1 wherein said microorganism is *Dactylosporangium aurantiacum* NRRL 18085.
7. A process according to Claim 1 wherein said Tiacumicin is Tiacumicin B.
8. A process according to Claim 1 wherein said Tiacumicin is isolated from said nutrient medium using techniques selected from the group consisting of: sieving and removing undesired material by eluting with at least one solvent or a solvent mixture; extraction with at least one solvent or a solvent mixture; Crystallization; chromatographic separation; High-Performance Liquid Chromatography (HPLC); MPLC; trituration; and extraction with saturated brine with at least one solvent or a solvent mixture.
9. A process according to Claim 1 wherein said microorganism is cultured at a temperature from about 25 ° to about 35 °C and at a pH from about 6.0 to about 8.0.
10. A process according to Claim 1 wherein the nutrient medium comprises one or more carbon sources selected from the group consisting of glucose, sucrose, starch, molasses, dextrins, whey, glycerol, lipids and corn meal.
11. A process according to Claim 1 wherein the nutrient medium is fed with an additional carbon source as needed.
12. A process according to Claim 1 wherein the nutrient medium comprises one or more nitrogen/organic sources capable of supporting microorganism growth

selected from the group consisting of beef extract, soybean meal, whole yeast, yeast extract, soybean flour, peptone, casamino acid, fish powder, corn steep liquor, ammonium salts, casein and amino acids.

13. A process according to Claim 12 wherein the nutrient medium comprises fish powder.

14. A process according to Claim 1 wherein the nutrient medium comprises one or more inorganic salts capable of supporting microorganism growth selected from the group consisting of K_2HPO_4, $MgSO_4.7H_2O$ and $CaCO_3$.

15. A process according to Claim 1 wherein the nutrient medium comprises at least one adsorbent capable of adsorbing one or more Tiacumicin during said culturing wherein said adsorbent is selected from the group consisting of Amberlite® XAD16, XAD16HP, XAD2, XAD7HP, XAD1180, XAD1600, IRC50, Duolite® XAD761 and a reverse phase silica gel.

16. A process according to claim 15, wherein the reverse phase silica gel is selected from the group consisting of KP-C18, KP-C18-WP, and KP-C18HS.

17. A nutrient medium for the production of Tiacumicins from a microorganism, said nutrient medium comprising a carbon source, a nitrogen source, trace elements, and an adsorbent, and wherein said nutrient medium is used to produce one or more Tiacumicin in a yield greater than about 50 mg/L broth.

18. A nutrient medium according to claim 17 wherein said Tiacumicin yield is greater than about 100 mg/L broth.

19. A nutrient medium according to Claim 18 wherein said Tiacumicin yield is greater than about 200 mg/L broth.

20. A nutrient medium according to Claim 17 wherein said Tiacumicin yield is from about 50 mg/L broth to about 500 mg/L broth.

21. A nutrient medium according to Claim 20 wherein said Tiacumicin yield is from about 100 mg/L broth to about 500 mg/L broth.

22. A nutrient medium according to Claim 17 wherein said nitrogen source is fish powder.

23. A nutrient medium according to Claim 17 wherein said microorganism is *Dactylosporangium aurantiacum* NRRL 18085.

24. A nutrient medium according to Claim 17 wherein said Tiacumicin is Tiacumicin B.

25. A nutrient medium according to Claim 17 wherein the nutrient medium comprises at least one adsorbent capable of adsorbing one or more Tiacumicin during said culturing.

26. A Tiacumicin produced by culturing a microorganism belonging to the species *Dactylosporangium aurantiacum* subspecies *hamdenensis* having the ability to produce and accumulate one or more Tiacumicin in a nutrient medium comprising a carbon source, a nitrogen source, trace elements such as inorganic salts, and an adsorbent, wherein said nitrogen source comprises fish powder, and wherein said Tiacumicin is produced in a yield greater than about 50 mg/L broth.